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EXAMINER

BRANT, DMITRY

ART UNIT PAPER NUMBER

2655

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/976,977	Applicant(s) WONG, YOON KEAN	
	Examiner Dmitry Brant	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thelen et al. (6,487,534)

As per claim 1, Thelen et al. disclose the following limitations:

- Accessing user input (740, FIG. 7)
- Performing coarse recognition on device (local recognizer, Col. 3, lines 1-3)
- Performing detailed recognition (remote recognizer, Col. 3, lines 1-3)
- Performing comparison between coarse and detailed results (selector makes the final choice between local and remote recognizers, Col. 3, lines 10-13)

Thelen et al. do not disclose that a client station is a mobile device. However, Thelen et al. does disclose that a client station is a general computer, of a type including laptops, PDAs, etc. (Col. 9, lines 63-65). The examiner takes the official notice that wireless computers are extremely well-known in the art (for example, a laptop with a wireless LAN card) and hence, it would have been obvious to one of ordinary skill in the

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art at the time of the invention was made to modify Thelen et al. to use wireless computers, such as laptops or PDAs, in order to improve users' mobility around the office.

Thelen et al. also do not disclose displaying to the user the results of coarse word recognition and also the results of the comparison between coarse and detailed recognitions. However, as mentioned above, Thelen et al. does disclose a client station which is a general type computer; hence, it necessarily includes a display (desktop, Col. 6, lines 41-45). The examiner takes the official notice that the process of displaying the recognition results on a computer screen is extremely well-known in the art of speech recognition (since most of the desktop-based speech recognition programs, such as Dragon's Naturally Speaking, tend to be used for word-processing or command entry, they usually display the recognized text within the word-processing program or the Web browser).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to display the coarse recognition results and the results of coarse/detailed recognition comparison on the user's display because this is well-known in the art and would generally enable the user to view and verify the results of the speech recognition, hence increasing the overall usability and reliability of the system.

As per claim 2, Thelen et al. disclose a server use for detailed recognition which is separate from the client's computer device. (720, FIG. 7)

As per claim 3, Thelen et al. disclose :

- Transferring user input from client device to another computing system
(760-770, FIG. 7)
- And transferring detailed result from computing system to client device
(785-790, FIG. 7)

As per claim 4, Thelen et al. disclose a local speech recognizer which detects specific keywords and forwards user's input to the appropriate server based on the interpretation of the keywords (Col 8, lines 36-48). The local recognizer then implicitly sends the recognition results to the server (in a form of recognized results) because it needs this information in order to route the data to the appropriate server, while the server needs this data in order to identify local recognizer.

Alternatively, sending the results of local speech recognition to the server simplifies the recognition process on the server (Col. 9, lines 20-35)

As per claim 5, Thelen et al. do not disclose using a wireless link.

However, Thelen et al. disclose using devices, such as laptops and PDAs, which suggest wireless connectivity. In addition, Thelen et al. disclose using a network between the client and the server stations (710, FIG. 7). The examiner takes the official notice that wireless networks are extremely well-known in the art.

Hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to use a wireless network for transferring data between client/server stations in order to improve users' mobility around the office, if the user were to use a wireless device, such as a PDA or a laptop.

As per claims 6-7, Thelen et al. do not disclose that detailed recognition is performed as a background process on the client's device.

However, Thelen et al. teach a system a client-server system interconnected by a network (FIG. 7). As it is well-known in the art of telecommunications, client-server systems are usually described in terms of the independent software processes rather than separate physical nodes. For example, a single workstation can act as both a client and a server at the same time by concurrently running both processes. It is also well-known that a standard TCP/IP stack will allow the processes running on the same machine to communicate with each other as if they were separated by a physical communication network via a TCP connection. In that sense, the network in Thelen et al. implies logical connectivity using the standard network communication protocol (TCP/IP). In addition, any system supporting concurrent processes (which are anyway required for client-server systems) would allow the placing of running processes in the background. For example, this is done by using "bg" command in Unix and through priority assignments in Windows NT's Task Manager.

For the above reasons, the examiner takes the official notice that it is well-known in the art that the standard client-server systems are not limited to the physically disjoint

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devices and can be easily implemented on the same machine, especially if that machine has multiple processors. In addition, the examiner further takes the official notice that it is well-known in the art that a machine with an operating system supporting multiple processes (Windows NT, Unix) necessarily supports a way of placing these processes in the background/foreground for performance reasons (for example, processes not limited in time are usually placed in the background, while "real-time" processes are running in the foreground).

Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to use a single device to run both coarse and detailed recognitions concurrently, so as to improve the accuracy of the recognition by using a detailed process running in the background (server), while also providing the user with an essentially "real-time" performance based on the recognition result of the coarse process (local client) (Col. 3, lines 5-14). As the server in Thelen et al. provides an accurate result after the initial result of the local client (Col. 3, lines 9-11), the modified system of Thelen et al. will achieve the same result because the background server process running on the machine will produce a more accurate, but a delayed recognition result.

As per claim 8, Thelen et al. disclose coarse (client) and detailed (server) speech recognition processes (750, 780, FIG. 7)

As per claims 9-10, Thelen et al. do not disclose user-input data being handwritten or image data. Thelen et al. only discloses a speech recognition system which utilizes two-tiered, client-server recognition approach (FIG. 7) which achieves the reduction of processing load on the client device by off-loading some of the more complicated jobs to the server.

Additionally, the examiner takes the official notice that it is well-known in the art that both handwriting and image recognition are particular applications within a field known as "pattern recognition." Consequently, the techniques used for speech recognition are also used across the field for image and handwriting recognition (See Morton Nadler, Eric Smith, "Pattern Recognition Engineering," page 12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the method of two-tier, client-server processing disclosed Thelen et al. to other pattern recognition applications, such as image and handwriting recognition, in order to reduce the processing load on the client devices by utilizing the resources of a specialized recognition server.

As per claim 11, Thelen et al. do not explicitly disclose that client processing is constrained by time/computing resources. However, Thelen et al. disclose an embodiment where user's input is recognized in "real time." (Col. 3, lines 8-9). The examiner takes the official notice that it is well-known to ones skilled in the art that "real-time" recognition processing necessarily imposes constraints on processing time and computing resources. The fact that recognition is done in "real time" implies that it must

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performed “right now”, i.e. within the time boundaries normally used during human-to-human conversations, which inherently places constraints on the time allowed for the processing of each utterance. In addition, because speech recognition is a computationally expensive process, it is naturally constrained, at least in some form, in its use of the computational resources when the recognition is performed in “real time.” In fact, every software process is constrained by the “computing resources” because it is the hardware that usually limits the computational power of a machine (RAM, disk space, etc).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made that the method of Thelen et al. places time and computational constraints on the client computer (coarse recognition), as it is well-known in the art that any “real-time” processing is necessarily limited by time and computational resources because of the “real-time” (almost immediate response time) requirement.

As per claim 12, Thelen et al. disclose the following limitations:

- A device accessing user input (740, FIG. 7) which performs coarse recognition (local recognizer, Col. 3, lines 1-3)
- A data link between the device and another computing device (network, 710, FIG. 7)

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- Another computing system (720, FIG. 7) which performs detailed recognition (remote recognizer, Col. 3, lines 1-3) and returns results to user device (785-790, FIG. 7)

Thelen et al. do not disclose that a client station is a mobile device. However, Thelen et al. does disclose that a client station is a general type computer, including laptops, PDAs, etc (Col. 9, lines 63-65). The examiner takes the official notice that wireless computers are extremely well-known in the art (for example, a laptop with a wireless LAN card) and hence, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to use wireless computers, such as laptops or PDAs, in order to improve users' mobility around the office.

As per claims 13, 17, Thelen et al. do not explicitly disclose that client processing is constrained by time and server processing is not constrained by time.

However, Thelen et al. disclose an embodiment where user's input is recognized in "real time." (Col. 3, lines 8-9). The examiner takes the official notice that it is well-known to ones skilled in the art that "real-time" recognition processing necessarily imposes constraints on processing time and computing resources. The fact that recognition is done in "real time" implies that it must performed "right now", i.e. within the time boundaries normally used during human-to-human conversations, which inherently places constraints on the time allowed for the processing of each utterance.

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In addition, Thelen et al. disclose that a server recognition results are later provided for comparison with the "initial" results of the local recognizer (Col. 3, lines 9-11). Because of the inherent network delay (710, FIG. 7) and the additional processing time required for recognition using complex models/larger vocabulary (Col. 3, lines 4-5), the server side would not be able to participate in "real-time" recognition of user's input. As a result, the server's response time is not constrained by time in the same sense as the "real-time" local recognizer on the client (server's result necessarily arrives after client's result, see FIG. 7)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made that the method of Thelen et al. places time constraints on the client side's response time (coarse recognition) and no time constraints on the server side's response time (detailed recognition), as it is well-known in the art that any "real-time" processing (client side) is necessarily limited by time. Also, since the server side cannot support true "real-time" processing, it is not limited by time in the same sense as the client side.

As per claims 14, 19, Thelen et al. disclose performing comparison between coarse and detailed results (selector makes the final choice between local and remote recognizers, Col. 3, lines 10-13)

Thelen et al. do not disclose displaying to the user the results of coarse word recognition and also the results of the comparison between coarse and detailed recognitions. However, as mentioned above, Thelen et al. does disclose a client station

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which is a general type computer; hence, it necessarily includes a display (desktop, Col. 6, lines 41-45). The examiner takes the official notice that the process of displaying the recognition results on a computer screen is extremely well-known in the art of speech recognition (since most of the desktop-based speech recognition programs, such as Dragon's Naturally Speaking, tend to be used for word-processing or command entry, they usually display the recognized text within the word-processing program or the Web browser).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to display the coarse recognition results and the results of coarse/detailed recognition comparison on the user's display because this is well-known in the art and would generally enable the user to view and verify the results of the speech recognition, hence increasing the overall usability and reliability of the system.

As per claims 15,16, Thelen et al. do not explicitly disclose wired/wireless data link.

However, Thelen et al. disclose network (710, FIG. 7) connecting client station and server station. The examiner takes the official notice that both wired and wireless data links are extremely well-known in the art to be used in communication networks.

As a result, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to use either wired or wireless

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data links as part of the disclosed network (710, FIG. 7), as it is well-known in the art and would allow the system to operate in both wireline and wireless environments.

As per claim 18, Thelen et al. disclose a local speech recognizer which detects specific keywords and forwards user's input to the appropriate server based on the interpretation of the keywords (Col 8, lines 36-48). The local recognizer then implicitly sends the recognition results to the server (in a form of recognized results) because it needs this information in order to route the data to the appropriate server, while the server needs this data in order to identify local recognizer.

Alternatively, sending the results of local speech recognition to the server simplifies the recognition process on the server (Col. 9, lines 20-35)

As per claim 20, Thelen et al. disclose:

- A client process accessing user input (740, FIG. 7) which performs coarse recognition (local recognizer, Col. 3, lines 1-3)
- A server process (720, FIG. 7) which performs detailed recognition (remote recognizer, Col. 3, lines 1-3) and returns results to user device (785-790, FIG. 7)

Thelen et al. do not disclose that detailed recognition is performed as a background process on the client's device.

However, Thelen et al. teach a system a client-server system interconnected by a network (FIG. 7). As it is well-known in the art of telecommunications, client-server

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systems are usually described in terms of the independent software processes rather than separate physical nodes. For example, a single workstation can act as both a client and a server at the same time by concurrently running both processes. It is also well-known that a standard TCP/IP stack will allow the processes running on the same machine to communicate with each other as if they were separated by a physical communication network via a TCP connection. In that sense, the network in Thelen et al. implies logical connectivity using the standard network communication protocol (TCP/IP). In addition, any system supporting concurrent processes (which are anyway required for client-server systems) would allow the placing of running processes in the background. For example, this is done by using "bg" command in Unix and through priority assignments in Windows NT's Task Manager. Therefore, the examiner takes the official notice that it is well-known in the art that the standard client-server systems are not limited to the physically disjoint devices and can be easily implemented on the same machine, especially if that machine has multiple processors. In addition, the examiner further takes the official notice that it is well-known in the art that a machine with an operating system supporting multiple processes (Windows NT, Unix) necessarily supports a way of placing these processes in the background/foreground for performance reasons (for example, processes not limited in time are usually placed in the background, while "real-time" processes are running in the foreground).

Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to use a single device to run both coarse and detailed recognitions concurrently, so as to improve the accuracy of the

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recognition by using a detailed process running in the background (server), while also providing the user with an essentially “real-time” performance based on the recognition result of the coarse process (local client) (Col. 3, lines 5-14). As the server in Thelen et al. provides an accurate result after the initial result of the local client (Col. 3, lines 9-11), the modified system of Thelen et al. will achieve the same result because the background server process running on the machine will produce a more accurate, but delayed recognition result.

As per claims 21, 23, Thelen et al. do not explicitly disclose that client processing (coarse recognition) is constrained by time and server processing (detailed background recognition) is not constrained by time.

However, Thelen et al. disclose an embodiment where user’s input is recognized in “real time.” (Col. 3, lines 8-9). The examiner takes the official notice that it is well-known to ones skilled in the art that “real-time” recognition processing necessarily imposes constraints on processing time and computing resources. The fact that recognition is done in “real time” implies that it must performed “right now”, i.e. within the time boundaries normally used during human-to-human conversations, which inherently places constraints on the time allowed for the processing of each utterance. In addition, Thelen et al. disclose that a server recognition results are later provided for comparison with the “initial” results of the local recognizer (Col. 3, lines 9-11). Because of the inherent computational delay (background process does not get an immediate access to the required CPU resources) and the additional processing time required for

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recognition using complex models/larger vocabulary (Col. 3, lines 4-5), the server process would not be able to participate in "real-time" recognition of user's input. As a result, the server's response time is not constrained by time in the same sense as the "real-time" local recognizer on the client (server's result necessarily arrives after client's result, see FIG. 7)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made that the method of Thelen et al. places time constraints on the client side's response time (coarse recognition) and no time constraints on the server's response time (detailed recognition), as it is well-known in the art that any "real-time" processing (client side) is necessarily limited by time. Also, since the server process cannot support true "real-time" processing, it is not limited by time in the same sense as the client process.

As per claims 22, 24, Thelen et al. disclose performing comparison between coarse and detailed results (selector makes the final choice between local and remote recognizers, Col. 3, lines 10-13)

Thelen et al. do not disclose displaying to the user the results of coarse word recognition and also the results of the comparison between coarse and detailed recognitions. However, as mentioned above, Thelen et al. does disclose a client station which is a general type computer; hence, it necessarily includes a display (desktop, Col. 6, lines 41-45). The examiner takes the official notice that the process of displaying the

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recognition results on a computer screen is extremely well-known in the art of speech recognition (since most of the desktop-based speech recognition programs, such as Dragon's Naturally Speaking, tend to be used for word-processing or command entry, they usually display the recognized text within the word-processing program or the Web browser).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to display the coarse recognition results and the results of coarse/detailed recognition comparison on the user's display because this is well-known in the art and would generally enable the user to view and verify the results of the speech recognition, hence increasing the overall usability and reliability of the system.

3. Claims 25-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thelen et al. in view of Perez-Mendez et al. (5,754,978)

As per claim 25, Thelen et al. disclose:

- A client process accessing user input (740, FIG. 7) which performs coarse recognition (local recognizer, Col. 3, lines 1-3)
- A data link between the device and another computing device (network, 710, FIG. 7)
- A server process (720, FIG. 7) which performs detailed recognition

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(remote recognizer, Col. 3, lines 1-3) and returns results to user device (785-790, FIG. 7). As it is well-known in the art of telecommunications, client-server systems are usually described in terms of the independent software processes rather than separate physical nodes. For example, a single workstation can act as both a client and a server at the same time by concurrently running both processes. It is also well-known that a standard TCP/IP stack will allow the processes running on the same machine to communicate with each other as if they were separated by a physical communication network via a TCP connection. In that sense, the network in Thelen et al. implies logical connectivity using the standard network communication protocol (TCP/IP). In addition, any system supporting concurrent processes (which are anyway required for client-server systems) would allow the placing of running processes in the background. For example, this is done by using "bg" command in Unix and through priority assignments in Windows NT's Task Manager. For the above reasons, the examiner takes the official notice that it is well-known in the art that the standard client-server systems are not limited to the physically disjoint devices and can be easily implemented on the same machine, especially if that machine has multiple processors. In addition, the examiner further takes the official notice that it is well-known in the art that a machine with an operating system supporting multiple processes (Windows NT, Unix) necessarily supports a way of placing these processes in the background/foreground for performance reasons (for example, processes not limited in time are usually placed in the background, while "real-time" processes are running in the foreground).

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Thelen et al. do not disclose an additional background (2rd) recognition process running on the client device, producing 2nd recognition result. Thelen et al. teach using 2 instead of 3 recognition engines.

However, Peretz Mendez et al. teach a system where 3 recognition engines are arranged to process user's input, the outputs of the recognition engines being compared to each other using comparator (FIG. 7).

Consequently, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. as taught by Perez-Mendez et al. so as to further improve the accuracy of the recognition by using 3 recognition engines (Col. 10, lines 56-61), one running on the remote server and two running on the client.

As per claims 26,28, 33, Thelen et al. do not explicitly disclose that client processing (coarse recognition) is constrained by time and other server processing (detailed background recognition and remote server recognition) are not constrained by time.

However, Thelen et al. disclose an embodiment where user's input is recognized in "real time." (Col. 3, lines 8-9). The examiner takes the official notice that it is well-known to ones skilled in the art that "real-time" recognition processing necessarily imposes constraints on processing time and computing resources. The fact that recognition is done in "real time" implies that it must performed "right now", i.e. within the time boundaries normally used during human-to-human conversations, which inherently places constraints on the time allowed for the processing of each utterance.

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In addition, Thelen et al. disclose that server's recognition results (both background and remote) are later provided for comparison with the "initial" results of the local recognizer (Col. 3, lines 9-11). Because of the inherent computational delay (background process does not get an immediate access to the required CPU resources/ remote server incurs network delays) and the additional processing time required for recognition using complex models/larger vocabulary (Col. 3, lines 4-5), neither of the server processes would be able to participate in "real-time" recognition of user input. As a result, the servers' response times are not constrained by time in the same sense as the "real-time" local recognizer on the client (server's result necessarily arrives after client's result, see FIG. 7)

It would have been obvious to one of ordinary skill in the art at the time of the invention was made that the method of Thelen et al. places time constraints on the client side's response time (coarse recognition) and no time constraints on the server's response time (detailed recognition via background process and remote server), as it is well-known in the art that any "real-time" processing (client side) is necessarily limited by time. Also, since neither of the server processes (both background and remote) support true "real-time" processing, they are not limited by time in the same sense as the client process.

As per claims 27, 29, and 34, Thelen et al. disclose performing comparison between coarse and detailed results (selector makes the final choice between local and remote recognizers, Col. 3, lines 10-13)

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Thelen et al. do not disclose displaying to the user the results of coarse word recognition and also the results of the comparison between coarse and detailed recognitions (including the results of the secondary comparison between 2nd and 3rd recognition results). However, as mentioned above, Thelen et al. does disclose that a client station is a general type computer, which necessarily includes a display (desktop, Col. 6, lines 41-45). The examiner takes the official notice that the process of displaying of the recognition results on a computer screen is extremely well-known in the art of speech recognition (since most of the desktop-based speech recognition programs, such as Dragon's Naturally Speaking, tend to be used for word-processing or command entry, they usually display the recognized text within the word-processing program or the Web browser).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Thelen et al. to display the coarse recognition results and the results of coarse/detailed recognition (1st vs 2nd and 2nd vs 3rd) comparison on the user's display because this is well-known in the art and would generally enable the user to view and verify the recognition results of each of the recognition stages (1st, 2nd, and 3rd), hence increasing the overall usability of the system and improving its accuracy.

As per claims 30-32, do not disclose user-input data being handwritten or image data. Thelen et al. only discloses a speech recognition system which utilizes two-tiered,

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client-server recognition approach (FIG. 7) which achieves the reduction of processing load on the client device by off-loading some of the more complicated jobs to the server.

However, the examiner takes the official notice that it is well-known in the art that both handwriting and image recognition are particular applications within a field known as "pattern recognition." Consequently, the techniques used for speech recognition are also used across the field for image and handwriting recognition (See Morton Nadler, Eric Smith, "Pattern Recognition Engineering," page 12)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the method of two-tier, client-server processing disclosed Thelen et al. to other pattern recognition applications, such as image and handwriting recognition, in order to reduce the processing load on the client devices by utilizing the resources of a specialized recognition server.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Thelen et al. (6,526,380) teach a system with multiple parallel recognizers.

White et al. (6,408,272) teach a distributed voice recognition system.

Joost (6,327,568) teaches a distributed voice recognition system.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to Tech Center 2600 receptionist whose telephone number is (703) 305- 4700.

DB

9/1/04


SUSAN MCFADDEN
PRIMARY EXAMINER